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ABSTRACT

This report evaluates the last year of the Comprehensive Bilingual Education Program, supported by Title VII funding and carried out at Adlai E. Stevenson High School in the Bronx, New York. The program served approximately 300 Spanish dominant students and focused on the development of Spanish and English language and reading skills, math, science, and social studies. Described in this report are instructional components of the program, as well as administrative, funding, and noninstructional components including curriculum development, supportive and guidance services, attrition prevention, staff development, and parent involvement. Also discussed are student attendance and admission to college. Achievement data are reported in table form. The limited successes of the program are attributed to the complex economic and social problems of the inner city community in which the school is located. (GC)

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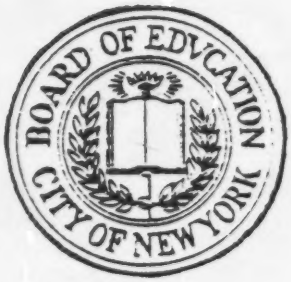
FINAL EVALUATION REPORT

ADLAI E. STEVENSON HIGH SCHOOL

COMPREHENSIVE BILINGUAL EDUCATION PROGRAM

ESEA TITLE VII
PROJECT 5001-42-07603
NYS CHAPTER 720
PROJECT 5001-42-08401

1979-1980



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FINAL EVALUATION REPORT
ADLAI E. STEVENSON HIGH SCHOOL

COMPREHENSIVE BILINGUAL EDUCATION PROGRAM

ESEA TITLE VII
NYS CHAPTER 720

1979-1980

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COMPREHENSIVE BILINGUAL EDUCATION PROGRAM

ADLAI E. STEVENSON HIGH SCHOOL

Location:	1980 Lafayette Avenue, Bronx, New York 10473
Year of Operation:	1979-1980, Fifth Year of Funding
Target Language:	Spanish
Number of Students:	300
Principal:	Leonard P. Littwin
Project Director:	Alfred Riccardi

INTRODUCTION

THE SCHOOL AND ITS MILIEU

Adlai E. Stevenson High School is located in an area of Southeastern Bronx known as Soundview. Recently constructed low and middle income developments and a popular shopping center have transformed what was once an isolated, open space into a developing community. Residents are predominantly Black and Puerto Rican. Many of them are recent arrivals from Puerto Rico, other Latin American countries, or some other section of New York City. Area transportation is limited. The major means of travel are the number 6 train and the Bruckner Expressway which cuts through the neighborhood. Consequently, for many residents the number 6 train is the connection with the city for employment, recreation and services. Because of the extent of the attendance area, many students live a considerable distance from the school.

An attractive, modern structure, Adlai E. Stevenson High School opened in 1970. The school and the area project an image of "newness." This may be

somewhat deceiving, however, since this "newness" obscures the complex social problems of an inner-city community. As of October 31, 1979 the total school population was 4,276 students. Nearly 60% of these were from low-income families, and 47% qualified for free lunch.

The ethnic composition of Stevenson's student body is approximately 53% Hispanic, 44% Black and 3% other (Oriental and White). The overwhelming majority of Hispanic students are Puerto Rican, although the number of students from the Dominican Republic appears to be increasing. Nearly 40% of the Hispanic population -- 877 students -- are of limited English proficiency (LEP) as defined by the Language Assessment Battery (LAB).

I. STUDENT CHARACTERISTICS

A. The Target Population, 1979-80

The Bilingual Program served approximately 300 students during 1979-80. Two categories of students comprise the program's population:

1. Newly arrived natives of Puerto Rico, South America and the Caribbean

   The majority of these students, about 60%, are from Puerto Rico; others originate from the Dominican Republic, Ecuador, Peru, or other Latin American countries. These students, who represent 60% of the total number of students, speak little or no English. They range in Spanish proficiency from students who have benefited from an excellent educational system in their native countries to students who have received very little formal education (less than fifth grade) in systems where poverty precluded

even the most essential educational assistance.

2. Students who were born and/or raised in New York and are, in most cases, equally limited in English and Spanish

The majority of these use a mixture of English and Spanish and sometimes seem to be trapped by interference and code-switching. Generally they speak Spanish at home, English in school, and a mixture of the two in the streets.

B. Entry Criteria

Students are referred to the program based upon their English score on the Language Assessment Battery (LAB). Those students who score below the twenty-first percentile are eligible for the program in compliance with the Aspira Consent Decree. Students are also interviewed by the guidance counselor to determine further their language fluency and dominance.

During the first two years of Title VII funding at Stevenson all students meeting the Consent Decree requirements were admitted into the program. This brought together students with widely divergent levels of achievement, fluency and language dominance. Seeing that the program was not as successful for students who were equally limited in Spanish as in English, program staff beginning with the third year of the project began to focus more closely on the truly Spanish dominant. Students whose English and Spanish LAB scores were very low or nearly equal were encouraged to opt out of the program. Of those eligible in 1979-80, 66 chose not to participate in the program.

This year the staff relaxed its entrance standards to include ninth and tenth graders who had histories of truancy. This may account for an anticipated increase in attrition.

In addition to receiving regular bilingual programming, all program students needing remedial math assistance participated in a math skills class supported by New York State Chapter 720 funds during 1979-80. Approximately 100 students were served by this program.

II. PROGRAM DESCRIPTION

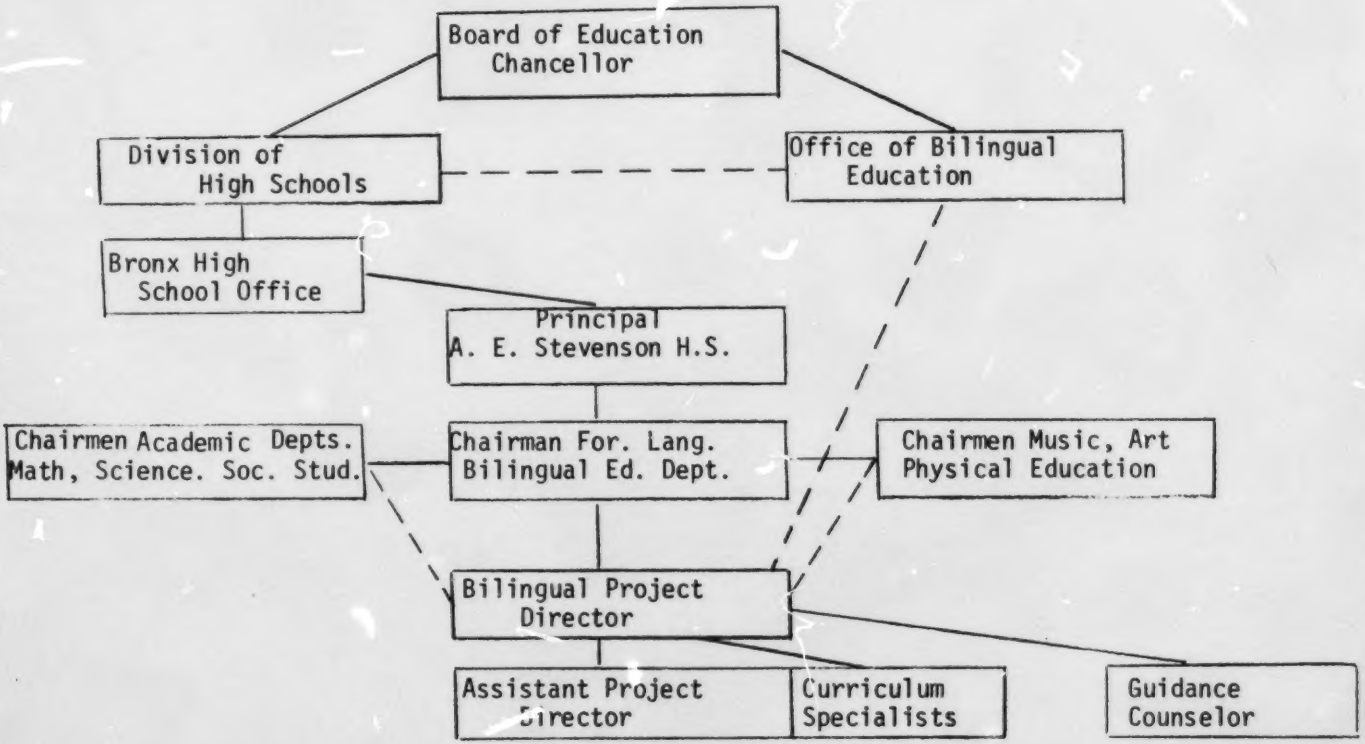
The school year 1979-80 was the final year of a five-year funding cycle for the Bilingual Program at Adlai E. Stevenson. During these five years a number of administrative changes have taken place in the program. During the first two years of the program the Project Director coordinated activities with five departments in the school: Social Studies, Mathematics, Biological and Physical Sciences, Foreign Languages and ESL. In 1977 a Department of Bilingual Education was formed which included the relevant content areas. The following year this department joined with the Department of Foreign Languages to become the Foreign Language/Bilingual Education Department. During this period, then, the bilingual program has succeeded in becoming institutionalized as a department, despite what one staff member termed a lack of strong school commitment to bilingual education.

Chart I shows the organization of the Adlai E. Stevenson Bilingual Program in 1979-80.

Currently, the Bilingual Program provides structure and support

CHART I

Organization Chart
Bilingual Program - Adlai E. Stevenson H.S. 1979-80



for bilingual education at Stevenson, including curriculum development, guidance and staff training. The Title VII staff consists of the following personnel:

1 Project Director
1 Guidance Counselor
2 Curriculum Developers
1 Secretary
2 Paraprofessionals

The resignation of the bilingual tax-levy science teacher necessitated a staffing modification during the year. Since no Spanish-speaking science teacher could be found, the Title VII Science Curriculum Specialist taught three biology classes and spent the remainder of her time developing science materials; the Math Curriculum Specialist taught two physical science classes and developed math curriculum materials the remainder of her time. This arrangement hampered curriculum development in both General Science and Mathematics. A Social Studies Curriculum Specialist was recruited to develop social studies curriculum materials during one semester.

III. INSTRUCTIONAL COMPONENT

Individualized programming is a special feature of the Bilingual Program at Adlai E. Stevenson High School. Each student is assisted by the Guidance Counselor in choosing the program which best fits his/her previous school record, current needs, and career goals.

Each student's program consists of: intensive instruction in ESL and/or English Reading and Language Arts; Spanish Language Arts; and instruction in the content areas of math, science and social studies. Students may also

take mainstream courses, including courses not offered in the bilingual program (such as chemistry, for example).

A. Bilingual Classes

Table I shows the bilingual courses offered in the program, with student enrollment, language of instruction and curriculum in use.

English. English language instruction is an important component of every student's program. Approximately 100 students receive intensive instruction in English as a Second Language for 15 periods per week (3 periods daily). Another 200 students take English Reading and Language Arts courses for 10 periods per week. Of these students, approximately 90% take Remedial English Reading, 8% follow a modified academic program in English, and 2%--students who have studied English for 3 to 4 years and had good ESL skills at entry--take the regular academic program in English.

Native Language. Students take content area courses in math, science and social studies, all taught in Spanish. These courses make use of a variety of curriculum units, lesson plans, handbooks and individualized modules developed by program staff over the five years of the Title VII program. All content area courses meet for five periods per week. In addition, all students take a Spanish course to improve their knowledge and command of their native language.

B. Mainstreaming

The philosophy and practice of mainstreaming at Stevenson is to move students gradually from total instruction in Spanish to total instruction in English. Thus, a student proceeds from ESL to regular English, from

TABLE I

STUDENT BREAKDOWN BY CLASSES IN BILINGUAL PROGRAM

COMPONENT/ SUBJECT*	No. Class/ Class Register	Language (s) of Instruction	Used for what % of class time?	Class Hours per Week	# Staffing: Numbers of: Teachers	Paras	Curriculum in Use (Describe)	Materials in Use Appropriate to Students' Native Language?
ESL	5/29/ 4/25	English	100	10/5	2.8	2	Lado Series Teacher Prepared	Yes
English	10/20	English	100	10	2	-	Remedial Reading Eng. Lang. Arts	Yes
Algebra	3/15	Spanish	90	5	.6	-	3 Semester 9th Gr. Math	Yes
Fundamental Math	6/15	Spanish	90	5	1.2	1	Basic Operations	Yes
Math Skills	5/20	Spanish	90	5	1.0	1	Reinforcement of Basic Skills	Yes
Eastern Civilization	2/25	Spanish	90	5	.4	-	Japan, China, Soviet Union	Reading level of some materials too high
Western Civilization	2/25	Spanish	90	5	.4	-	Modern European History	
Consumer Economics	1/25	Spanish	90	5	.2	-	Consumer viewpoint on credit, sales insurance, etc.	All teacher prepared
American Studies	1/25	Spanish	90	5	.2	-	American Government Current Events	Teacher prepared
Biology	1/18	Spanish	90	5	.2	.2	Regents Biology Curriculum	Reading level of some materials too high
Life Sci.	2/21	Spanish	90	5	.4	.4	Non-Regents Bio Curriculum	Reading level of some too high
Introductory Physical Sci.	2/23	Spanish	90	5	.4	.4	Ninth Grade Sci.	Reading level of some too high
Spanish	10/30	Spanish	100	5	2	-	Spanish for Native Speakers	Yes

Bilingual Science to Chemistry taught in English. The increase in English-language instruction depends on the students' degree of English-language fluency. Mainstreaming occurs only when students have demonstrated a mastery of English through test scores and classroom performance. Teacher judgment is also considered.

During 1979-80, 60 to 70 students were partially mainstreamed and received some content area instruction in English. Among these were six students who took Geometry in the mainstream, and three students who took Chemistry. Additionally, all twelfth grade program students--a total of 32 students--took Social Studies in the mainstream.

Additional mainstream courses that bilingual program students attended during 1979-80 were Auto Shop, Woodworking, and Jewelry Design in the Industrial Arts department and Typing, Bookkeeping, and Record Keeping in the Business Education department.

As students move into the mainstream they receive intensive guidance from the Bilingual Program staff. Students who have been fully mainstreamed continue to be referred back to program staff for guidance and follow-up. During 1979-80 eight students were fully mainstreamed and received all instruction in English.

IV. FUNDING, INSTRUCTIONAL AND NON-INSTRUCTIONAL COMPONENTS

Table II shows the various components of the Bilingual Program, with funding sources and numbers of personnel. As will be seen, the bilingual instructional program at Adlai E. Stevenson is supported by a variety of sources. Generally, ESL and English reading classes are supported by Title I/PSEN and tax levy funds; Social Studies and science are primarily

TABLE II

PROGRAM COMPONENTS AND FUNDING SOURCES

INSTRUCTIONAL COMPONENT

Instructional Component	Funding Source(s)	Number of Personnel: Teachers	Paras
E.S.L.	Title I/PSEN	2.0	2.0
	Tax Levy	.8	-
Reading (Eng.)	Title I/PSEN	2.0	-
	Tax Levy	1.4	-
Native Language	Tax Levy	2.0	-
Math	Tax Levy	1.8	-
	Chap. 720	1.0	1.0
Social Studies	Tax Levy	1.4	-
	Title VII	-	1.0
Science	Tax Levy	1.0	-
	Title VII	-	1.0
Administration & Supervision	Tax Levy	A.P.2.0	
	Title VII	1.0	

NON-INSTRUCTIONAL COMPONENT

	Funding Source(s)	Personnel Providing Services
A. Curriculum Development	Title VII	1 Math .5 Science .5 Social Studies
B. Supportive Services	Title VII	Guidance Counselor
	Title VII	Project Director
C. Staff Development	Title VII	Universities Project Director Curriculm Developers
D. Parental and Community Involvement	Title VII	Project Director
E. Other	Title VII	Cultural Activities

funded by tax levy. New York State Chapter 720 funds support mathematics instruction in addition to the tax levy staff. Finally, the non-instructional components of the program are principally supported by Title VII.

V. NON-INSTRUCTIONAL COMPONENTS

The Bilingual Program, supported by Title VII funding, provided curriculum development, guidance services for students, intensive training for staff, and opportunities for parental and community involvement.

A. Curriculum Development

Curriculum development, an important activity of the Bilingual Program since its inception, was somewhat hampered during the current year due to the staffing modification previously described. Nonetheless some curriculum development was carried out.

During 1979-80 a syllabus containing unit by unit instruction and approximately 55 lessons was developed for the Math Skills course. Pre and post tests for the course were also completed. A two-semester individualized course in Medical Lab techniques was completed. Work was done on a revision of the Introductory Physical Sciences curriculum, although it was not completed.

Other curricula or materials developed by program personnel during the five-year period included:

- LAB Handbook for Regent's Biology
- Lesson Plans for Elementary Algebra
- Individualized Modules in Fundamental Mathematics

-Units in:

Africa

The Soviet Union

American Studies

Readings in Latin America

Individualized Curriculum in Reading in Spanish

B. Supportive Services

Intensive guidance services are a hallmark of the Bilingual Program at Stevenson. The Program's Guidance Counselor meets with each student at least twice a semester for programming. He also meets with students for personal counseling and does intake interviews to determine which students would best benefit from the program. Students entering the Program meet in groups for orientation; while in the Program they receive both individual and group counseling. Intensive guidance is provided for students as they enter the mainstream.

In addition, the Guidance Counselor assists senior students with career choice and college decisions and placements. He has been working with the East Harlem College Counseling Center for the past three years, and during this period has established contacts with various colleges. Several students were successfully placed in colleges last year. The recruiter from Marist College, where one student from the program is now enrolled, has returned to the school this year and is helping to recruit other students.

The guidance counselor often refers students who are experiencing difficulties in school to alternate programs which may better serve their needs.

During 1979-80, seven students were referred to the Roberto Clemente Center of the Auxiliary Services for High Schools.

Personal counseling is sometimes quite appropriate during academic advisement. Bilingual students at Stevenson are academically heterogenous. They range from fourth and fifth grade levels to advanced levels in Spanish. They are also generally older than the average students in their grades.

Many students in the program experience multiple pressures (i.e. culture change, academic anxiety, peer pressure, family adjustments) in addition to the normal pressures of adolescence. Many students are not living with their mother and father, and in many cases join their parents after having lived with relatives in their native countries.

Personal counseling often results from a grade advisement meeting, from a teacher referral or from a student's own initiative. A warm, informal atmosphere in the bilingual office lends itself to students making constant use of guidance services.

Although no formal orientation group was formed this year because of time limitations, twenty-five ESL students attend an after school program, Training In Occupations and Language for Limited English Speaking Students. This group emphasizes academic achievement, adjustment and career orientation. Comparisons are made between school in the United States and the students' previous educational experience to assist the students during the adjustment process.

C. Attrition

Adlai E. Stevenson, like many high schools of the inner city, is plagued with the problem of attrition, which is particularly acute among

students of Hispanic backgrounds. According to the Coordinator and information generated by the school itself, in the 1979-1980 school year there were 1300 ninth graders registered in the whole school, with only 700 registered in the twelfth grade--a decrease of almost 46%. Among Hispanic students, the attrition is even higher: while 793 students were registered in the ninth grade, only 280 remained in grade 12--an attrition of 65%. In response to the drop-out rate, the school administration instituted a special program in 1979-1980 aimed at drop-out prevention and targeting the especially vulnerable ninth graders. Involving intensive teacher-student relationships, this program was not available to bilingual students. It would clearly be helpful if the Bilingual Program is able to focus its counseling resources on the most drop-out prone students, because the Bilingual Program tends to suffer from the same problems facing the Hispanic student population as a whole.

TABLE III

Students Served By The Bilingual Program, By Grade

1977-1978 Through 1979-1980

	1977-78	1978-79	1979-80
Grade 9	95	110	130
Grade 10	65	78	78
Grade 11	58	67	45
Grade 12	68	40	32

It is important, however, to note that not all students leaving the Bilingual Program do so because they drop out. Some were fully mainstreamed; others transferred to another school or an alternative program. Table IV presents a breakdown of students who left the program in 1979-1980, and the reasons why they did so.

TABLE IV

Students Leaving The Bilingual Program, 1979-1980

Category (Reason)	Number of Students Reported
Student fully mainstreamed	2
Discharged to an alternative program	1
Transferred to another school (moved)	7
Graduated	1
Returned to native country	15
Removed from program by parental option	--
Discharged, job	1
Truant	3
Other (probably includes the above)	12
Total	42, or 14% of the target population

The data presented in the above table are not complete, but they indicate the relative proportions of students leaving the program and some of their reasons for doing so. A good number are mobile, leaving for another school or their native country. At least some are truants and others who leave because of personal problems and/or academic failure. It is these who would most profit from a program of counseling and academic support (peer tutoring, for example).

D. Staff Development

Staff training activities included pre-service workshops, monthly meetings, and university training.

Pre-service curriculum development workshops were conducted by the Project Director during the summers preceding the third, fourth and fifth years of the Bilingual Program. These workshops were held at the school and provided staff training in bilingual curriculum writing in all content areas. Math, Science, and Social Studies Curriculum Specialists, as well as Spanish teachers, participated in the workshop sessions. Materials for the different content areas were developed during the workshops and later used by staff.

During the second year of the program two weekend workshops were held, which were funded by Title VII and conducted by the New York State Department of Education. Topics covered in the workshops included individualized instruction, the problems of LEP students, and the philosophy of bilingual education.

Monthly meetings conducted by the Project Director have been a standard part of in-service training activity. These meetings have dealt with methods and materials of bilingual instruction.

During the five-year funding period of the Bilingual Program, staff members have also benefited from extensive university training. Table III presents a summary of staff training at institutions of higher education.

From the table it is evident that Title VII Program staff have improved their qualifications for providing bilingual instruction at Adlai E. Stevenson High School.

TABLE V

Training at Institutions of Higher Education
Taken by Program Personnel

Number	Title	Training	I.H.E. Involved
1	Chairman Bil. Ed. Dept.	Philo. of Bilingual Ed.	St. John's University
1	Project Director	M.A. Administration	The City College of N.Y.
1	Guidance Counselor	M.S. Guidance	The City College of N.Y.
1	Science Teacher	M.A. Bilingual Ed.	Fordham University
1	Science Teacher	50 credits towards Ph.D. Bilingual Ed.	Teacher's College Columbia University
2	ESL Teachers	Certification in ESL	Adelphi University C.W. Post College
2	Math Teachers	Math courses	Wagner College Herbert Lehman College
1	Secretary	Courses towards M.S. Guidance	The City College of N.Y.
1	Paraprofessional	B.A. Spanish	Hunter College
1	Paraprofessional	12 Credits towards B.A. Bilingual Ed.	Fordham University

E. Parental Involvement

A key focus of parental involvement in the Bilingual Program is the Community Bilingual Advisory Committee, which consists of four parents, two students and the Program's guidance counselor. The committee members were selected at a general meeting of parents.

The CBAC meets bi-monthly during the school year. The following are the agendas for three meetings during 1979-80:

November 7, 1979

1. Explanation of the components of the Bilingual Program and the objectives for the current school year.
2. Discussion of requirements for the High School diploma and the ways in which the Bilingual Program will help students complete these requirements.

January 16, 1980

1. Announcement of vacancy for Chapter 720 math teacher and discussion of requirements for bilingual teachers and per diem certificates.
2. Discussion of proposal for new Title VII funding cycle.

March 18, 1980

1. Report on student trip to Pennsylvania Dutch Country.
2. Discussion of application for Title VII funding for industrial arts and business education.

Parent members of the CBAC have commented about the Bilingual Program, "This Program is good because it helps the student learn in his own language," and "Many students do not speak English and this Program helps them."

Notices of school and program activities are sent to all parents of Program participants. Parents received notification of the Open School event held on November 14 and 15, 1979, and many Bilingual Program parents took part.

F. Student Responses

Students' attitudes to the Program, although not amenable to easy quantification, comprise an important dimension that is reflected in a number of measures.

Attendance. Bilingual Program students have consistently had attendance rates which exceed that of the school at large.

The figures for 1979-80, while not equalling the averages of previous years, may reflect a decision to accept into the program students with a history of truancy. Nevertheless, Bilingual Program students continued to have rates of attendance which exceeded the school-wide rate, a tendency which increased by grade (see the Findings section).

Admittance to College. A high percentage of Seniors in the Bilingual Program applied and were accepted to college, and the percentage has been steadily increasing over the past several years of the Program. This year, of 28 Seniors eligible to graduate, 18 students were accepted to college. This equals 64%, compared to 59% in 1978-79 and 55% in 1977-78.

Suspension. The record of Bilingual Program students has been particularly outstanding in this area. There has been only one suspension during the entire five-year Program, far below the rate of the school at large.

VI. FINDINGS

Assessment Procedures and Findings

The following section presents the assessment instruments and procedures, and the results of the testing.

Assessment Procedures and Instruments

Students were assessed in English language development, growth in their mastery of their native language, mathematics, social studies and science. The following are the areas assessed and the instruments used:

English as a Second Language	--	Criterion Referenced English Syntax Test (CREST)
Reading in Spanish	--	Inter-American Series: Prueba de Lectura
Mathematics Achievement	--	Teacher-made Tests
Mathematics Performance	--	Teacher-made Tests
Science Performance	--	Teacher-made Tests
Social Studies Performance	--	Teacher-made Tests
Attendance	--	School and Program Records

The following analyses were performed:

A) On pre-post standardized tests of native language reading achievement and teacher-made examinations in native language and mathematics, statistical and educational significance are reported:

1) Statistical Significance was determined through the application of the correlated t-test model. This statistical analysis demonstrates whether the difference between pre-test and post-test mean scores is larger than would be expected by chance variation alone; i.e. is statistically significant.

This analysis does not represent an estimate of how students would have performed in the absence of the program. No such estimate could be made because of the inapplicability of test norms for this population, and the unavailability of an appropriate comparison group.

2) Educational Significance was determined for each grade level by calculating an "effect size" based on observed summary statistics using the procedure recommended by Cohen.[1] An effect size for the correlated t-test model is an estimate of the difference between pre-test and post-test means expressed in standard deviation units freed of the influence of sample size. It became desirable to establish such an estimate because substantial differences that do exist frequently fail to reach statistical significance if the number of observations for each unit of statistical analysis is small. Similarly, statistically significant differences often are not educationally meaningful.

Thus, statistical and educational significance permit a more meaningful appraisal of project outcomes. As a rule

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[1]Jacob Cohen. Statistical Power Analysis for the Behavioral Sciences (Revised Edition). New York: Academic Press, 1977 Chapter 2.

of thumb, the following effect size indices are recommended by Cohen as guides to interpreting educational significance (ES):

a difference of 1/5 = .20 = small ES

a difference of 1/2 = .50 = medium ES

a difference of 4/5 = .80 = large ES

B) On the Criterion Referenced English Syntax Test (CREST) information is provided on the number of objectives attempted and mastered, the percentage of objectives mastered versus those attempted, and the number of objectives mastered per month of treatment. Information is also provided on student performance on the various test levels.

C) In the areas of mathematics, social studies and science, the percentage of bilingual students passing teacher-made examinations in Spanish will be compared to the performance of non-program students on final examinations in mainstream content area classes. For example, the percentage of bilingual students passing final examinations in mathematics will be compared to that of non-program students in mainstream classes. Student outcomes are aggregated by subject area. The comparison is presented for both fall and spring terms.

D) Information is provided on the attendance rate of students participating in the bilingual program, compared with that of the total school population.

The following pages present student achievement in tabular form.

TABLE VI

English as a Second Language

Fall 1979

Results of the Criterion Referenced English Syntax Test (CREST) Reporting the Number of Objectives Mastered, Percent Mastered, and Objectives Mastered Per Month.

Grade	# of Students	Average # of Objectives Attempted	Average # of Objectives Mastered	% Mastered/ Attempted	Average Months of Treatment*	Objectives Mastered Per Month
9	32	12.5	5.4	44%	3.3	1.6
10	28	12.0	6.1	51%	3.3	1.9
11	15	7.5	3.4	45%	3.3	1.0
12	5	11.0	6.8	77%	3.3	2.0
Totals	80	11.2	5.4	48%	3.3	1.6

* Instructional time between pre- and post-testing

In Fall, CREST results showed that 11 objectives were attempted and 5.4 were mastered on the average for the total sample. The percent of objectives mastered ranged from 44% in grade 9 to 77% in grade 12. Rates of learning ranged from 1 objective mastered per month for 11th grade students to 2 objectives mastered per month for 12th grade students. It should be noted that the number of students in the upper grades are small, and the results may represent the effects of a selection factor.

TABLE VII

English as a Second Language

Fall 1979

Student Performance on the
Criterion Referenced English Syntax Test (CREST)
A Breakdown by Test Level and Grade.

		LEVEL I			LEVEL II			LEVEL III		
Grade	# of Students	Attempted	Mastered	Percent Mastered	Attempted	Mastered	Percent Mastered	Attempted	Mastered	Percent Mastered
9	32	267	99	37%	94	52	55%	38	33	61%
10	28	213	110	52%	86	38	44%	37	24	65%
11	15	23	10	43%	39	22	56%	51	19	37%
12	5	4	4	100%	27	21	78%	13	9	69%
Totals	80	507	223	44%	246	133	54%	139	75	54%

In Fall the test by grade level crosstabulation revealed a moderate relationship between grade level and level of test on which students performed. Ninth and tenth grade students tended to function primarily at the lower test levels and upper grade students tended to perform at upper test levels. Mastery rates varied less with grade levels than with test level. Generally, students on upper grade levels tended to master a higher percentage of attempted objectives than lower grade students performing on the same level.

TABLE VIII

English as a Second Language

Spring 1980

Results of the Criterion Referenced English Syntax Test (CREST) Reporting the Number of Objectives Mastered, Percent Mastered, and Objectives Mastered Per Month.

Grade	# of Students	Average # of Objectives Attempted	Average # of Objectives Mastered	% Mastered/ Attempted	Average Months of Treatment *	Objectives Mastered Per Month
9	29	7.0	3.7	53%	2.6	1.4
10	22	8.0	5.0	62%	3.0	1.7
11	5	5.4	3.4	63%	3.1	1.1
12	3	3.7	3.7	100%	3.3	1.1
Totals	59	7.2	4.3	59%	2.8	1.5

* Instructional time between pre- and post-testing

Overall, Spring CREST results showed higher mastery rates than in Fall in terms of the percent of objectives mastered, but fewer objectives were attempted in Spring than in Fall. Rate of learning per unit of instructional time ranged from 1.1 objectives mastered per month of instruction in grades 11 and 12 to 1.7 mastered per month in 10th grade. It should be noted that the number of students in the upper grades are small, and the results may represent the effects of a selection factor.

TABLE IX

English as a Second Language

Spring 1980

Student Performance on the
Criterion Referenced English Syntax Test (CREST)
A Breakdown by Test Level and Grade.

Grade	# of Students	LEVEL I			LEVEL II			LEVEL III		
		Attempted	Mastered	Percent Mastered	Attempted	Mastered	Percent Mastered	Attempted	Mastered	Percent Mastered
9	29	116	60	52%	53	19	36%	33	28	85%
10	22	35	30	86%	126	76	60%	16	4	25%
11	5	10	6	60%	17	11	65%	--		
12	3	--	--	--	11	11	100%	--		
Totals	59	161	96	60%	207	117	57%	59	38	65%

Spring CREST results revealed that test level varied directly with grade level. Students generally were more successful in mastering attempted objectives in Spring than Fall. With the exception of 10th graders attempting level III objectives and grade 9 students attempting level II objectives, students mastered more than 50% of objectives attempted throughout the grades on all test levels.

TABLE X

Native Language Reading Achievement
Spanish Speaking Students

Significance of Mean Raw Score, Difference Between Initial and Final Test Scores for Spanish Speaking Students with Full Instructional Treatment on the CIA Prueba de Lectura, Parts 1 and 3 combined, Level III

		Pre-Test		Post-Test						
Grade	N	Mean	Standard Deviation	Mean	Standard Deviation	Mean Difference	Corr. Pre-Post	t	p	ES
9	55	35.7	14.0	47.8	18.6	12.1	.91	10.78	.001	1.45
10	54	44.4	14.8	57.6	17.5	13.2	.88	11.55	.001	1.57
11	31	54.9	16.9	69.8	16.6	14.9	.90	12.10	.001	2.17
12	29	60.8	12.8	79.0	8.43	18.2	.83	13.09	.001	2.43

Students showed native language reading growth that was highly statistically significant at all grade levels on the CIA Prueba de Lectura. The mean gains ranged from 12 points in grade 9 to 18 points in grade 12. These gains, expressed in standard deviation units, were judged to be educationally meaningful at very high levels. The effect sizes ranged from 1.45 standard deviation units in grade 9 to 2.43 standard deviation units in grade 12. Thus, students showed substantial gains in native language reading, and achieved the program's objective in this area.

TABLE XI

Native Language Mathematics Achievement
Spanish Speaking Students

Significance of Mean Raw Score, Difference Between Initialand Final Test Scores for Spanish Speaking Students with Full Instructional Treatment on Teacher-Made Examinations in Mathematics

		Pre-Test		Post-Test						
Grade	N	Mean	Standard Deviation	Mean	Standard Deviation	Mean Difference	Corr. Pre-Post	t	p	ES
9	66	13.7	5.6	21.2	6.2	7.5	.41	9.49	.001	1.17
10	24	16.0	5.8	21.5	6.5	5.5	.73	5.93	.001	1.21
11	7	19.3	6.4	22.6	5.2	3.3	.21	1.18	NS	.45
12	--	--	--	--	NO DATA	--	--	--	--	--

Students in grades 9 and 10 made highly statistically significant gains in native language mathematics achievement on teacher-constructed exams. The gains of 7.5 points in grade 9 and 5.5 points in grade 10 were judged to be educationally meaningful. Grade 11 students which showed a 3.3 point gain did not show growth that was statistically significant. In that this gain was of moderate educational significance (ES=.45), the lack of statistical significance should be interpreted in light of the inadequate sample size or from unreliability of the function measured due to a small pre/post correlation. It should be noted that most students reported were learning on the lower levels of the tests. The reliability of the tests is not documented, however, and it is recommended that it be examined.

TABLE XII

Achievement in Content Areas

Comparison of Pass Rate for Program and Non-Program Students on Teacher-Made Final Examinations, Regardless of Grade Level
Fall 1979

	Bilingual Program Students			Mainstream Students		
	No. Taking Exam	Passing Exam No.	%	No. Taking Exam	Passing Exam No.	%
Math	125	34	27.2	665	244	35.6
Science	81	54	66.7	189	105	55.6
Social Studies	130	77	59.2	461	215	46.6

Table XII presents a comparison of the percentages of bilingual students passing teacher-made examinations in the content areas (mathematics, science and social studies) with non-program students taking tests in mainstream content area classes.

As seen above, a higher percentage of bilingual students passed teacher-made final examinations in science and social studies. In science, 66.7% of bilingual students passed final exams and 55.6% of non-bilingual students passed final exams, a difference of 11%. In social studies, 13% more bilingual students passed final exams; 59.2% of bilingual students passed compared to 46.6% of non-bilingual students. In mathematics, 8.4% more of non-bilingual students passed mathematics exams: 35.6% of non-bilingual compared to 27.2% of bilingual students passed teacher-made final examinations. Thus, with the exception of mathematics, the program objective was achieved.

It should be noted that the percentage of students passing their courses is generally higher than the number passing tests in those courses. This comparison

TABLE XII

(Continued)

raises a number of issues, however, including the possible differences in the characteristics of the students served; possible individual teacher effects, and the procedure of aggregating across content areas and levels of instruction.

TABLE XIII

Achievement in Content Areas

Comparison of Pass Rate for Program and Non-Program Students on Teacher-Made Examinations, Regardless of Grade Level
Spring 1980

	Bilingual Program Students			Mainstream Students		
	No. Taking Exam	Passing Exam No.	%	No. Taking Exam	Passing Exam No.	%
Math	57	12	21.1	431	200	46.4
Science	59	21	35.6	157	111	70.7
Social Studies	95	36	37.9	484	245	50.6

As seen in the above table, a higher percentage of mainstream students passed teacher-made final examinations in all content areas tested. The percentage of mainstream students passing exams ranged from 46.4% in math to 70.7% in science. The percentage of bilingual students passing exams ranged from 21.1% in math to 37.9% in social studies. The difference in percent passing favoring mainstream students ranged from 35.1% in science to 25.3% in math.

These results reaffirm previously-raised questions as to the validity of the comparison made. The populations being observed are dissimilar, and may or may not be taking parallel courses with similar content. In addition, individual teacher standards may differ, and teacher-made examinations may be of widely varying validity and reliability for the students tested. For a further discussion of these issues and recommendations, see the Summary of Findings and Recommendations sections which follow.

TABLE XIV

Attendance Rates

Number and Percent of Students Surpassing the General School Attendance Rate, Reporting the Program Attendance Rate and Standard Deviation

Grade	No. of Students	Average Attendance	Standard Deviation	Number Surpassing Rate	% Exceeding School Rate
9	128	71.1	17.5	68	53.1
10	80	79.5	23.3	60	75.0
11	45	84.1	18.6	37	82.2
12	32	88.8	14.1	27	84.4

In all grades, program students surpassed the school wide attendance rate. The average attendance rates ranged from 71% in grade 9 to 89% in grade 12. The percentage of project students exceeding the school wide attendance rate ranged from 53% in grade 9 to 84% in grade 12. Thus, the attendance objective was met and substantially surpassed.

VII. SUMMARY OF FINDINGS

English Language Achievement. In this area, students in the Fall showed good mastery of objectives, mastering an average of 1.6 per month of instruction. The students mastered approximately half of the objectives they attempted (regardless of level of instruction). Mastery rates varied less with grade than with test level. Generally, students on upper grade levels tended to master a higher percentage of attempted objectives than lower grade students performing on the same level(although upper grade students attempted a far fewer number of objectives).

In the Spring, students continued to master an average of 1.5 objectives per month of instruction, and mastered almost 60% of those attempted (note, however, that fewer were attempted in the Spring). Spring results revealed that test level varied directly with grade level. On the whole, the percentage of objectives mastered was substantially higher in the Spring.

Reading Achievement in Spanish. Students showed growth in reading in Spanish which was highly significant, both statistically and educationally. All grade levels met the program's criterion for success in this area.

Achievement in Mathematics. Students in grades 9 and 10 made highly significant gains on teacher-made examinations in mathematics, meeting the program criterion for success in this area. The small group of grade 11 students made gains from pre- to post-test, which while not statistically significant, were of moderate educational significance (no data were reported for 12th grade students). These data appear at first glance to contradict the low passing rates reported for students in bilingual mathematics classes. One possible interpretation is that the students, while

making gains, are learning at the lower levels of the test and are performing below the passing level (see Recommendations).

Achievement in Content Areas. The performance of bilingual students in math, science and social studies was compared to non-program students taking content area courses in mainstream classes. The program set criterion was that bilingual students would achieve rates of passing teacher-made final exams which would equal or surpass the percentage of mainstream students passing final examinations in English.

In the Fall, a higher percentage of bilingual students passed examinations in science and social studies. In mathematics, however, non-bilingual students achieved higher rates of passing.

In the Spring term, a higher percentage of non-bilingual students passed teacher-made tests in all the content areas tested. In other words, the criterion for success was not met in the Spring term.

Discussion. As has been previously indicated, the above comparison procedure may be subjected to a number of criticisms and comments. This procedure, long a feature of the evaluation design of the Bilingual Program, was originally founded on the assumption that the course content in bilingual and mainstream classes was parellel, and that the final examinations were uniform. The procedure never, however, examined student characteristics nor such individual teacher effects as teacher standards. Previous evaluations have rather consistently shown the bilingual students performing at levels below their mainstream peers. Following a ruling by the Chancellor, the practice of administering uniform examinations was eliminated. As a result, individual teacher-made tests were then used, thereby increasing possible teacher effects on the results of the testing.

The comparison itself appears to be a dubious one, since program students are recent immigrants and are likely to have characteristics which differ from students of the mainstream population. While the curricula in bilingual and mainstream classes are essentially similar in the opinion of the Program Coordinator, the teacher-made examinations used may vary considerably in reliability and validity from one teacher to another. At present, the reliability of the tests used is unknown. It would appear, then, that the comparison precedure is fraught with difficulties which tend to negate its usefulness.

On the other hand, the percentage of students passing the examinations is relatively low. Even though low academic performance is generally characteristic of the total school population, the bilingual students are reported as experiencing a considerable degree of failure. A variety of recommendations are offered in the appropriate section of this report towards confronting the problem of low achievement.

Attendance. The average attendance rate of program students ranged from 71% to almost 89%, increasing consistently by grade level. The perentage of students exceeding the schoolwide rate ran from 53% in grade 9 to 84% in grade 12. As a whole, program students had an average rate 80.9%, compared to a schoolwide rate of 77.3%.

VIII. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions:

Over the five years of its funding cycle, the Bilingual Program at Adlai E. Stenson High School has been institutionalized: a departmental structure has been crystalized, curricula have been developed, and staff competencies have been increased. Some curricular areas, such as Medical Lab Techniques, are unique to New York City high school bilingual programs. Though individualized programming, counseling and referral activities, the Bilingual Program at Stevenson has contributed to the academic and personal growth of the students served. Indications of this are the good rates of growth on standardized tests, percentages of program students who demonstrate high rates of attendance, and who graduate and continue on to institutions of higher education.

On the other hand, over the five years of its functioning, the Program and the school have confronted problems of low academic performance and student attrition which affect schools city-wide, and will continue to pose a challenge. Recommendations will be made towards strengthening the efforts which have already been made.

The sections which follow present summary information on some of the project outcomes over the last three years of this funding cycle, and indicate some areas of program success over time.

Graduation and College Enrollments. Over the previous three years, the percentage of Bilingual Program seniors who graduate has remained high while the number who go to college has increased:

Adlai E. Stevenson Bilingual Program

Seniors, Graduates, and College Enrollments, 1977-78 to 1979-80

1977-78	%	1978-79	%	1979-80	%
68 Seniors		40 Seniors		32 Seniors	
43 Grads	63% of Seniors	39 Grads	97.5%	28 Grads	87.5%
22 Went to College	51% of Grads	23 Went to College	59 %	18 Went to College	64 %

Attendance. While data for 1977-1978 were not presented in equivalent form, almost all students were reported to have exceeded the schoolwide rate of 72%. Other comparisons indicate:

1978-1979:	Schoolwide rate:	74.8%
	Program rate:	86.3%
1979-1980:	Schoolwide rate:	77.3%
	Program rate:	80.9%

A special program for dropout prevention was implemented in the school for ninth grade students, and schoolwide attendance rates increased as a result. Nevertheless, Bilingual Program students continued to have attendance rates which exceeded those for the total school, although they did not receive the benefits of the dropout prevention program.

B. Recommendations:

As this is the final year of the Bilingual Program's funding cycle, the following recommendations are made in the hope that Adlai E. Stevenson will maintain its commitment to serving the needs of students of limited English proficiency after the termination of the funding period, building

upon the base which has already been established by the efforts and commitment of the Bilingual Program staff.

1. Given the outcomes reported for performance in the content areas, it is recommended that, at least, the reliability of the teacher-made instruments be examined, and that student characteristics be better defined prior to making the comparison. It is also recommended that performance in courses of differing levels, e.g., general science and physics, not be aggregated as "science," but reported by individual course content. Finally, in light of the above considerations, revision of the evaluation design may be the preferred alternative.

2. The level of student performance suggests a number of recommendations. As it is the feeling of the Program Coordinator that many of the students have difficulties in grasping content area material because the level of available texts is too high, it is recommended that the staff continue to review the reading level of commercial materials, and to explore with other Title VII projects serving similar students the possibility of sharing materials for students with limited reading skills.

Towards strengthening student skills, tutoring by peers or others may be helpful in the content areas.

Strengthening student reading skills in their native language would appear to be a key element in a proposed attack on the problem. One possible approach might be the development of an intensive content-oriented course in reading in Spanish. Another might be increased articulation between ESL and content area instruction, perhaps with a curriculum specialist facilitating the coordination. This articulation might include an increased stress on reading activities and skills

development in content area classes, and reinforcement in ESL classes of concepts being taught in the content areas. Such reinforcement would also facilitate the students' transition from Spanish to English.

3. Noting the problem of attrition in the school, it is recommended that the program attempt to follow up on students who drop out, to better determine their reasons for leaving and to work towards preventing others from doing the same. Prevention, however, requires counseling, family contacts and other forms of support for students. Drop-out prevention and guidance services would be greatly enhanced by the addition of staff. A family worker would be most helpful in being able to visit homes, meeting with parents and students in order to minimize truancy and identify other problems. This individual would also be able to assist with group guidance and career guidance activities.

To increase parental support for the program, it is recommended that parental involvement be emphasized through special activities such as home visits (see above), telephone calls, and letters.